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ABSTRACT

Modern technology is making it possible to improve education for the handicapped through the world exchange of information on instructional and professional materials for special education. Current developments in the United States, including the National Instructional Materials Information System and the rapid development of a number of instructional management systems designed to enable teachers to individualize instruction and to identify instructional objectives, teaching techniques, and related instructional materials needed to attain highly specific instructional goals, could facilitate the attainment of new levels of achievement in specialized educational services for handicapped children throughout the world. (Author/SBH)

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University of Stirling, Scotland
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"Improving Instruction Through the Exchange of Information On Instructional and Professional Materials for Special Education"

Panel 11

Tuesday, June 27, 10:30 a.m. to 12:00 p.m.

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INTRODUCTION

Modern technology is making it increasingly possible to enhance the lives of persons with handicaps through improved education. Opportunities to improve education can be expanded through the world-wide exchange of information on instructional and professional materials for special education. Such international exchange of information can be facilitated through presently available applications of modern technology and may be accelerated through currently developing international efforts.

1979 has been designated the International Year of the Child. The United Nations, in attempting to place the child in the center of world attention, is inviting the world community to renew and reaffirm its concern for the present condition and the future of its children. The resolution declaring IYC points to the specific objective of providing basic services. Providing such basic services can be aided and encouraged by the widespread dissemination of information about instructional and professional materials responsive to the needs and problems of children. The International Year of the Child should stimulate new research on children and programs for children and the widespread gathering and dissemination of information relevant to children. We who are concerned

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with handicapped and gifted children should be especially concerned to assure that they, along with their more normal peers, have appropriate opportunities for learning and for the full realization of their potential to contribute to their own cultures. The IYC may offer a unique and timely occasion to plan and to press vigorously for increased educational services for exceptional children. An International Instructional and Professional Materials Information Exchange can contribute to the expansion and improvement of basic educational services for all children.

BACKGROUND

In 1970, a small conference of experts from Denmark, Finland, Norway, Sweden, and the United States was convened in Copenhagen to discuss an International Information Exchange in special education. The conference, sponsored by the Council for Exceptional Children, and hosted by our distinguished colleague I. Skov Jørgensen, included among participants my good colleague on this panel, William C. Geer, Executive Secretary of the Council for Exceptional Children and Edwin W. Martin, Deputy Commissioner of the Bureau of Education for the Handicapped, also participating in this World Congress.

Among the conclusions reached at this short conference, now almost eight years ago, were the following:

> "Rapid expansion in educational research and development has further demonstrated the importance of developing effective means for helping educators apply these results. In various ways countries have developed information systems for delivering needed information to educators. A notable example is the Educational Resources Information Center (ERIC) of the U.S. Office of Education."

> "Today the need for information exchange is universal. Educational advancement in each country can accelerate developments in all countries. In contrast, information systems which store and retrieve documents mainly from one country, such as ERIC does for the U.S., are limited,

> and persons using them may remain uninformed of significant progress elsewhere in the world. However, this problem can be overcome easily by the initiation of document exchanges among countries."

A pilot international document exchange program was proposed. To the present writer's knowledge, this exchange has not yet achieved a level of development necessary to be of significant help. In the intervening years, the need has grown extensively and the capability to respond to the need has grown exponentially. In the remainder of this paper, we review some relevant developments in the United States and make a proposal that might contribute to and accelerate the development of an international exchange of information about instructional and professional materials. We will then solicit discussion of the ideas presented in this panel and entertain proposals for action.

THE NATIONAL INSTRUCTIONAL MATERIALS INFORMATION SYSTEM (NIMIS)

From 1974 to 1977, the National Center on Educational Media and Materials for the Handicapped at the Ohio State University was engaged in the development of the National Instructional Materials Information System (NIMIS). NIMIS, as we have known it, provided information on a wide variety of instructional materials for use in classrooms and other settings to educate handicapped children. NIMIS was designed to be a computer-based, on-line interactive information retrieval system specifically developed for the purpose of assisting teachers, parents, and other educators in locating information about instructional materials. Such a computer-based system enables individuals to "converse" with the computer. The individual asks questions by typing them on a computer keyboard with the answers appearing immediately on a television screen.

NIMIS provided descriptive information concerning more than 36,000 selected instructional media and materials. Materials of four kinds were included: child-use instructional materials -- materials used by the child or by the teacher and child interacting in the process of education, instruction, and evaluation. These included instructional kits and games, equipment, aids, appliances and other non-print media along with the usual learner vertification. Secondly, teacher education materials -- instructional materials used to prepare teachers to select, use, evaluate, design, and adapt media, materials, and educational technology for the special education of children with handicaps. These were limited to media, materials, and technology related professional materials. Third, materials for measurement and evaluation -- materials designed to provide for evaluation, assessment, measurement, and diagnosis of the current skills and ability of the child with a handicap. Inclusion of these materials is a more recent and limited development. And fourth, prototype materials -- materials of an experimental or one of the kind nature that have been developed as models for possible future development. These materials representing new developments may be among the most useful for International information sharing. Much time might be saved by sharing information on potentially duplicative development efforts.

Most of the instructional media, materials, and educational technology in the NIMIS have been non-print materials such as instructional kits, films, video cassettes, audio cassettes, filmstrips, games, toys, and other materials exploiting audiovisual technology for the special education of persons with impairments, disabilities, and handicaps. In 1974, it was estimated that in the U.S. there were more than 300,000

instructional materials available commercially for both handicapped and non-handicapped learners. Since then, there has been a virtual explosion in the development of instructional materials. A very few of these are materials specifically designed for use by the handicapped, but the number is increasing among those more recently developed. The 36,000 represented in NIMIS, not all of which were specifically designed nor adapted for the handicapped, remain only a small fraction of what is available for the education of non-handicapped children. Unfortunately, all too few of these materials have been developed and tested with instructional effectiveness as a primary consideration. Even fewer have been specifically designed or adapted for use with persons who are handicapped and also developed and tested with instructional effectiveness for these specialized groups as their primary considerations. Descriptive information on instructional media, materials, and technology included in NIMIS was to be accompanied by evaluative information. Even though such evaluative information is still extremely limited, all materials in the NIMIS system were selected by specialists in the education of the handicapped and most of them are accompanied by such statements as, "...evidence shows that this material is currently being used by teachers and educational programs (for the various disability groups)..." It seems highly likely that a substantial portion of these materials, particularly the multimedia kits, games and simulations, transparencies, as well as the films and filmstrips would have some applicability to cultures other than the United States. Much more can and should be done in the evaluation of instructional materials. This area offers a specially fruitful possibility for international cooperation.

The NIMIS data-base is limited to domestic materials and is thus, less rich and complete than it could be if it included materials from the

international community. Cross cultural evaluations of media, materials, and educational technology could be reported in the evaluation component of the information system. Thus, an entry might read, this material or this device has been tested with children in specific cultures and evidence suggests its usefulness under specified conditions.

Currently, the National Information Center for Special Education Materials (NICSEM) is continuing the development of the National Bibliographic Information Retrieval System focusing on educational objectives and materials for the handicapped. NICSEM incorporates the informational components of NIMIS, which are being recompiled into a new format thus identifying more than 36,000 media and materials which can be correlated to specific handicapping conditions.

The major services and products provided by NICSEM include a master catalog of special education materials from NIMIS in microfiche and book form; indexes organized by handicapping conditions as well as staff training materials in microfiche and book form; and a catalog of special education non-print media from these data bases. Professional users who have large volume needs for information requiring immediate access to information on professional and child use special educational materials can have complete on-line computer search capabilities.

NIMIS II will be of widespread interest because of current efforts to relate the included materials to specific learning characteristics, instructional objectives, and teaching strategies.

An inquiry directed to the University of Southern California which is developing the National Information Center for Special Education Materials indicates no current plans for expanding the data-base to include materials from abroad. It may be in order to direct a recommendation from this World Congress to the Bureau of Education for the

Handicapped which sponsors the NICSEM development to encourage the inclusion of materials from abroad and to provide for the sharing of information from NIMIS/NICSEM to other countries. More about this recommendation at the conclusion of this paper.

INSTRUCTIONAL MANAGEMENT SYSTEMS

Among rapidly developing innovations in special education is the use of instructional management systems, sometimes also called instructional objectives banks, or computer-based instructional support systems. These systems are designed to enable teachers to individualize instruction and to identify the instructional objectives, teaching techniques and related instructional materials needed to attain highly specific instructional goals. We recently queried more than 20 developers of such instructional management systems to explore the possibilities for providing an integrated relationship between such systems and the NIMIS. As yet, incomplete analysis indicates a wide range of sophistication in such systems, apparent duplication of effort, and the need for standards, criteria and guidelines for system development and evaluation. There is, however, great potential for relating information about instructional materials and specific instructional objectives and teaching strategies. Guidelines and evaluative criteria for the development or selection of search systems should encourage diversity and creativity but also attempt to maximize the possibilities for complementary and compatible systems keyed to instructional materials and to facilitate their use of a national system like NIMIS.

The expansion of special education opportunities for handicapped children world wide is bringing about rapid development of new instructional materials and methods. Many of these materials and methods can be useful in cultures other than those in which they were developed, and the dissemination of information about them can accelerate the exploration of their usefulness elsewhere. The development of an International Exchange of Information about such instructional materials and methods would facilitate a cross-cultural exchange that could be of significant benefit to handicapped and gifted children and their teachers everywhere.

My colleagues on this panel are making similar recommendations regarding Professional Materials for Special Education and an International Bibliography in Special Education. They too, review existing work and indicate the possibilities for International, cooperative extensions of these efforts in behalf of wider dissemination of professional materials and instructional media, materials, and technology. We solicit your discussion of these ideas and the endorsement or modification of our recommendations or the generation of new and additional recommendations.

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